Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A tip device having at least ~~a~~ a portion thereof ~~with an outer surface comprising bound to~~ a substrate layer functionalized ~~of~~ by ~~a material comprising~~ nanoparticles comprising nanocrystals which are bound to a surface of said substrate,

the ~~nanoparticles~~ nanocrystals acting as active media capable of interacting with ~~respect to~~ a predetermined sample to form with the sample a donor-acceptor or acceptor-donor pair ~~electromagnetic radiation~~,

said interaction of the tip with the sample modifying light emission of the sample by transferring or accepting energy to or from the sample.

2. (Currently Amended) The device according to claim 1, ~~wherin~~ wherein said ~~at least portion of the de~~ substrate ~~vice~~ is made of [[a]] at least one of the following ~~material~~ materials: ~~selected from~~ insulator-, semiconductor-, ~~or~~ and conductor-based material.

3. (Currently Amended) The device according to claim 1, wherein the ~~thickness of the~~ nanoparticles ~~containing~~ form a structure comprising one or more layers comprising at least one sub-monolayer, or monolayer. ~~layeris from sub-moanolayer to multiple layers.~~

4. (Currently Amended) The device of claim 3, wherein the nanoparticles are bound to said ~~outer~~ surface either directly or through a linker molecule.

5. (Currently Amended) The device according to claim 1, wherein the ~~nanoparticles~~ nanocrystals are made of one or more semiconductor[[=]], metal or oxide materials.

6. (Currently Amended) The device according to claim 5, wherein said ~~nanoparticles are~~ nanocrystals comprise one or more nanocrystals having ~~with a variety of~~ at least one of the following shapes: ~~selected from~~ spherical, ~~or~~ nearly spherical, rod, branched shape, wire, and tube ~~ore core-shell layered structures of these shapes~~.

7. (Currently Amended) The device according to claim 5, wherein said nanoparticles are made of a nanocrystal material comprising at least one of the following: CdSe/ZnS,

InAs, InP, GaP, GaAs, InSb, GaSb, GaN, Si, Ge, CdTe, ~~CdTe,~~ CdSe, ZnSe, ZnO, Au, Ag, Pt, Ni, Pd, In, and Bi ~~or mixtures thereof~~.

8. (Currently Amended) A method of forming a tip device for use in analyzing a sample ~~having at least a portion thereof operable as active media with respect to electromagnetic radiation~~, the method comprising

reacting a surface of at least a portion of the tip with [[a]]nanoparticles comprising nanocrystals in solution, powder or film ~~with at least a portion of a tip~~ so as to bind ~~a layer of~~ said nanoparticles to ~~an outer~~ said surface ~~of said at least portion of the tip~~

thereby functionalizing said surface by~~,~~ said nanoparticles capable of acting as ~~the~~ active media interacting with ~~respect to~~ a predetermined sample ~~electromagnetic radiation~~ to form with the sample a donor-acceptor or acceptor-donor pair,

said interaction of the tip with the sample modifying the light emission of the sample by transferring or receiving energy to or from the sample, respectively.

9. (Currently Amended) The method according to claim 8, wherein said surface of the tip ~~device~~ is made of or coated

by [[a]] at least one of the following ~~material~~ materials: ~~selected from~~ Si, Au, Ag, Pt, Ti, Co, Cr, Ir, ~~combinations of these metals,~~ Si_3N_4, TiN, glass, diamond and carbon.

10. (Cancelled)

11. (Currently Amended) The method according to claim 8, wherein said surface of said at least portion of the tip is made of [[a]] at least one of the following ~~material~~ materials ~~selected from~~: insulator-, semiconductor- ~~or~~ and conductor-based material.

12. (Currently Amended) The method according to claim 8, wherein ~~the thickness of~~ the nanoparticles form a structure ~~containing~~ comprising one or more ~~layer~~ layers ~~bound to the outer surface of the tip is from~~ comprising at least one sub-monolayer or monolayer ~~thickness to multiple layers thickness~~.

13. (Currently Amended) The method of claim 8, comprising reacting said surface within said at least portion of the tip with linker molecules so as to obtain a tip having at least a portion thereof bound to the linker molecules, and

carrying out said reacting of said at least portion of the so-obtained tip with the nanoparticles solution, powder or film.

14. (Currently Amended) The method according to claim 13, wherein said linker molecules are organic molecules bearing at least two functional groups, one of the functional groups being capable to react and bind to the ~~tips'~~ surface and another of the functional groups being capable to react and bind to the nanoparticles.

15. (Currently Amended) The method according to claim 13, comprising:

providing [[a]] the tip device with said surface within at least portion of the tip being made from at least one of the following materials: Si, SiO_2, glass, titanium oxide, TiN or Si_3N_4;

silanizing ~~at least portion of the tip~~ said surface with an organosilane compound either in solution or in gas phase;

~~to form tip with at least a silanized portion~~ and

exposing the silanized portion ~~resulting tip~~ to a solution, powder or film comprising the nanoparticles

~~to form the tip having at least portion thereof with the outer surface bound to the layer of nanoparticles, the nanoparticles containing layer having a thickness se~~

16. (Previously Presented) An optical apparatus for the use in analyzing a sample, the apparatus comprising at least one tip device configured according to claim 1.

17. (Original) The apparatus according to claim 16, comprising a light source assembly, which comprises a pumping source operable to generate excitation radiation and said at least one tip device, which when pumped emits exciting energy to irradiate a sample and thus cause a radiation response of the sample.

18. (Original) The apparatus according to claim 16, comprising a light source assembly, which comprises a pumping source and said at least one tip device, the tip device when pumped by exciting radiation absorbs the exciting energy and transfers this energy, by a dipolar mechanism or by direct emission of a photon, to irradiate a sample and thus cause a sample response thereto.

19. (Original) The apparatus according to claim 16, comprising a light source assembly and detection assembly, the detection assembly comprising said at least one tip device, which when excited by energy coming from a sample, generates a radiation response indicative of the sample excitation.

20. (Original) The apparatus according to claim 16, comprising a light source assembly and a detection assembly, the detection assembly comprising said at least one tip device, the tip device, when being excited by energy coming from a sample, either directly by absorption or by a dipolar energy transfer mechanism, generates a radiation response indicative of the sample excitation.

21. (Currently Amended) The apparatus of claim 16, configured ~~configures~~ and operable as a Fluorescent Resonance Energy Transfer (FRET)-based microscope.

22. (Previously Presented) The apparatus of claim 16, configured and operable as a light source.

23. (Currently Amended) The apparatus of claim 16, configured and operable as a Raman microscope ~~microscopy~~, said nanoparticles serving to locally enhance a Raman signal.

24. (Previously Presented) The apparatus of claim 16, configured and operable as a second harmonic generation microscope, said nanoparticles serving to locally enhance a second harmonic signal.

25. (Previously Presented) The apparatus off claim 16, configured and operable as a non-linear optical microscope with the nanoparticles serving to locally enhance a signal.

26. (Previously Presented) The apparatus of claim 16, configured and operable as a scanning probe microscope for topography imaging.

27. (Cancelled)

28. (Previously Presented) The apparatus of claim 16, configured and operable as a chemical force microscope.

29. (Currently Amended) A method for use in imaging a sample, the method comprising causing an energy interaction in a donor-acceptor pair formed by the tip of ~~any one~~ claim 1 and the sample, and detecting a radiation response to said interaction indicative of sample characteristics.

30. (Original) The method of claim 29, wherein the radiation response includes radiation generated in the sample in response to exciting energy coming from the tip.

31. (Original) The method according of claim 29, wherein the radiation response includes radiation generated by the tip in response to exciting energy coming from the sample.

32 -38. (Cancelled)

39. (New) The method according to Claim 8, wherein said binding of the nanocrystals comprises incubating the substrate in a solution containing nanocrystals at substantially room temperature.

40. (New) The method according to Claim 39, wherein said substrate is silanized before said incubating.

41. (New) The method according to Claim 39, wherein the temperature of incubation is in a range from a melting point of a solvent to a boiling point of said solvent.

42. (New) The method according to Claim 41, wherein the solvent is toluene, the melting and boiling points being 95^0 C and 110^0 C, respectively.

43. (New) The tip according to Claim 14, wherein said functional groups include at least one of the following: silane, thiols, carboxylate and amines.